APPENDIX H:
Information and Education

Montana Loon Society's Educational Loon Trunks

The Montana Loon Society developed Educational Loon Trunks for loan in Western Montana, free of charge. Activities and materials are appropriate for students from pre-Kindergarten to High School.

TRUNKS ARE AVAILABLE AT THESE LOCATIONS:

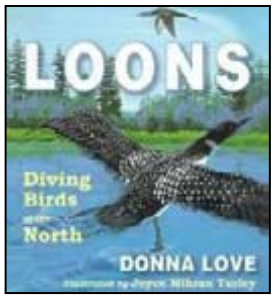
Montana Natural History Center
120 Hickory Street
Missoula, MT
Contact: Jazz Rowell
(406) 327-0405
Info @ TheNatureCenter.org

U.S. Forest Service
Tally Lake Ranger Station
650 Wolfpack Way, Kalispell, MT
Contact: Amy Jacobs
(406) 758-3544
ajacobs @ fs.fed.us

Confederated Salish & Kootenai Tribes
Natural Resources Department
301 Main Street, Polson, MT
Contact: Germaine White
(406) 883-2888 ext. 7299
germainew @ cskt.org

U.S. Forest Service
Murphy Lake Ranger Station
12797 U.S. Hwy 93 S., Fortine, MT
Contact: Lynn Johnson
(406) 882-8345
lmjohnson @ fs.fed.us

CONTENT HIGHLIGHTS:



"Loons on Our Lakes" Information & Activity Notebook

Loon study skin or taxidermy mounts (may require special arrangements)

Loon egg replica

Loon puppets - one adult & one chick

Children's Loon Costume with script

Laminated Posters

"Lottie the Loon," plush squeeze with realistic loon call

Loon Videos: "Great Montana Loon Rescue" & "On Golden Pond"

Loon Slide Show & Cassettes: "Hello, I Am a Loon" & "Voice of the Loons"

"The Life of a Loon in Pictures," with script

Loon Books:

How the Loon Lost Her Voice, by Anne Cameron
Loons, by Roy Dennis
Loons, Diving Birds of the North, by Donna Love
Loon Lake, by Jonathan London
Loon Lifestyle, Conversations with Claire De Loon, by Jane MacDonald
Love of Loons, by Kate Crowley and Mike Link
Top 40 Questions and Answers about Loons, by Jeff Fair

Plum Creek

Montana Loon Society's Educational Loon Trunk is brought to you in part by a grant from Plum Creek Timber Company and by contributions from the U.S. Forest Service

RESPONSIBLE WATERCRAFT USE AND Montana's Loons

Montana has many treasures, including its beautiful mountain lakes.

The Common Loon, known for its haunting calls and striking black and white breeding plumage, use a number of these lakes for their summer nesting grounds.

Watercraft operators are naturally drawn to these lakes and often come into close contact with loons. Responsible watercraft use will help ensure that both humans and loons continue to share Montana's lakes.

The Montana Loon Society

The Montana Loon Society is a non-profit organization concerned about the Common Loon in Montana. An increase of human recreational pressures on lakes, shoreline development and springtime angling in nesting areas has caused this concern.

The Montana Loon Society's Purpose Is To:

Monitor Common Loon populations in Montana.

Increase public knowledge and awareness about loons.

Protect and enhance critical loon habitat and welfare.

Identify management or research needs and obtain funds for same.

Facilitate cooperation between government agencies, lakeshore owners and the general public to accomplish these goals.

For more information contact us at:

P.O. Box 1131,

Seeley Lake, Montana 59868

www.montanaloons.org

MONTANA LOON SOCIETY

Ways Watercraft Affect Loons

Canoes slip quietly into nesting areas and can startle loons off nests. **Fishing Boats,** especially bass and pike anglers, spend lots of time in waters perfect for nest sites. **Speed Boats** send waves crashing into the shoreline. **Personal Watercraft** can speed in shallow water and may run over chicks.

PLEASE OBEY ALL LOON NESTING SANCTUARY SIGNS!

Most loon lakes are signed warning that a nest is near. Loons give a warning too. **Their distress call sounds like a laugh. Listen for and heed this call. It means: *"Please move away."***

If you see a loon 'dancing' by raising its chest straight up out of the water, and slapping the water with its wings, it is ***URGENT*** that you move away. ***You are in their territory.***

What Everyone Can Do:

Enjoy loons from a distance. Listen to their lovely, haunting calls. Enjoy the solitude of Montana. Loons need this solitude to breed and raise their young. If the loons are gone, your solitude might be slipping away too.

The Common Loon

Common Loons are large, goose-size, black and white diving birds that spend their summer on open freshwater lakes and winter on the coast. They feed mostly on fish. They are 2-3 feet long, weigh 8-12 pounds and have a wingspan of 4 - 5 feet.

Approximate Range of the Common Loon in the Pacific Northwest

The Common Loon is not as common in the Western States as the name implies. Breeding pairs are found in only four states west of the Mississippi River. Montana has the largest population with approximately 200 birds. Most of these nest north of Missoula and west of the Continental Divide.

Montana's Nesting Loons

Of the 65 pairs which attempt to nest only 24-26 pairs successfully hatch and raise 1 - 2 chicks each year. Nests are usually on small islands in marshy areas such as bays, coves, inlets or backwaters.

The nesting season in May and June is the loon's most CRITICAL TIME and loons aren't like ducks and geese that have large broods. Loons *only* lay 2 eggs, which both parents take turns incubating for 28-29 days.

Boat Traffic Can Cause Loss Of Eggs.

- **Loon parents leave if watercraft come within 150 yards of the nest** (the length of 1 1/2 football fields) leaving the eggs without warmth or protection.
- **If disturbed often, loons abandon the nest.** A pair *may* renest if it isn't too late in the season, but they only have two chances. If two loons are together near inlets, marshy shorelines, or backwaters in May or June a nest site may have been disturbed.

Nursery Room

Loon chicks rest, feed, and grow in and around their territory during the months of June, July and August. Look for them in backwaters and along the shoreline.

Boat Traffic Can Cause Loss of Chicks.

- **Young chicks are not waterproof.** They need to be able to climb up on their parent's backs to stay warm and dry. When watercraft come close parents leave their chicks to defend their territory.
- **Young chicks are very buoyant and** can't dive quickly to get out of the way. They can be run over.
- **Chicks tire easily.** The presence of watercraft causes them to keep swimming instead of feeding and resting. This can weaken them affecting their ability to survive.

Safeguard your health and wealth

The Ribbon of Life

The shoreline, where land, water, and air meet, is a vital link providing plants and wildlife the resources they need for life. We, too, rely on shorelines for sustenance. Communities have grown up along the water's edge and we continue to return to the shore to rest and restore our spirits.

Those of us who live by water experience its magic every day. Our health, our children's health, and the long term value of our waterfront property depend on how we care for the shore, the "ribbon of life."

Photo by: Lester Bigcrane, Wildland Rec., CS&KT

Twelve Simple Steps to Keep Your Paradise Intact

- Keep the lot well-treed, never clearcut.
- Protect shoreline vegetation; replant area lacking shrubs and trees with native species.
- Start a buffer strip by leaving some grass uncut near the water.
- Give clear instructions to your contractors and monitor their work.
- Avoid spilling fuels, antifreeze, paint thinner or other chemicals on land or water; clean up fast!
- Don't use fertilizers, pesticides, or herbicides near the water.
- Use only phosphate-free soaps, detergents and cleaners in your home.
- Pump out your septic tank regularly every two to three years if you have a field system.
- Extend the life of your septic system by avoiding tank additives and minimizing water consumption.
- Refuel your boat with care; don't spill a drop.
- Watch your boat's wake; it causes erosion and is a disturbance to birds nesting on the water's edge!

Photo by: U of M Library, Missoula, MT

Benefits of Shoreline Care

Caring for your shoreline means less work, not more! You will help preserve water quality and safeguard your family's health. You will also help protect the beauty of your paradise, maintaining its investment value. Extra benefits include more time to relax and enjoy!

Prepared by:

Lake County Conservation Dist.
45358 Hwy 93
Ronan, Montana 59864
(406) 676-2841

Flathead Lakers
P.O. Box 70
Polson, Montana 59860
(406) 883-1346

Lake County Planning Dept.
106 4th Ave. E.
Polson, Montana 59860
(406) 883-7235

Flathead Conservation Dist.
30 Lower Valley Rd.
Kalispell, MT 59901
(406) 752-4220

Confederated Salish and Kootenai Tribe
Natural Resource Dept.
Box 278
Pablo, Montana 59855
(406) 883-2888

Always check regulations before building or making changes to your shoreline.

Cover Photo by: Lester Bigcrane, Wildland Rec., CS&KT

Special thanks to The Living By Water Project for their contribution to this brochure

Gull Printing, Inc.

Waterfront Living

simple tips, lasting benefits

Waterfront Living
Let's Enjoy
1. Natural shoreline — great wildlife habitat.
2. Small floating dock — low impact: hinged from a stationary platform or deck located above high water.
3. Septic system far from the shore — reduces water pollution.
4. Narrow, gravelled footpath — less chance of erosion.
5. Trimmed trees and adjustable awning — natural air conditioner with view maintained.
6. You work less — relax more!
7. Kitchen compost — improves your soil's quality.
8. Low-maintenance native plants — provide shoreline buffer.
9. Building — set back from shore and in character with setting.
10. Well-maintained motor — electric, or modern 2 stroke or 4 stroke outboard, operated at low wake speed near shore.
Let's Talk
1. Bare shoreline — subject to erosion which can degrade water quality and affect your property value.
2. Solid dock — destroys wildlife habitat, alters current, causes erosion elsewhere.
3. Fertilizer spills, chemical runoff and pet droppings — damage water quality.
4. Paved lane — pollution-laden runoff, including oil and antifreeze leaks from your car, flows to water.
5. No shade trees — overworked air conditioner adds to electric bill.
6. Removal of natural vegetation — more work for you and more runoff.
7. Collecting lawn clippings — deprives soil of nutrients; try mulching.
8. Ornamental shrubs — require chemicals and extra work.
9. Poor fuel management — gas and oil spills from cans, tanks and leaky boat motors are deadly to aquatic environments.
10. Hardened shoreline — eliminates "natural filter", degrades water quality and blocks wildlife access.

"Montana's Loons"

Presentation by Chris Hammond

Unless otherwise indicated, all images are of adult common loons in breeding-season plumage.

Slide	Image(s)	Notes
1	Common Loons on the water	**Common Loon** *Gavia immer*. Breeds across Alaska and Canada with small populations in the northeastern states. Montana has the largest population west of the Mississippi with 200 birds. The largest populations in the lower 48 are in Minnesota (state bird), Wisconsin, and Michigan. This in the only loon to breed in the lower 48. They winter along both coasts. Calls are particularly haunting. Goose-sized birds measuring 30-33 inches from the beak to tail, 8-12 pounds, 4 foot wing-span.
2	(Loon call text with embedded loon sounds)	**Loon Calls** • Wails: More ghostly, some say wolf-like; eerie; used to communicate with each other (pair), or with other loons; warning for bald eagles, "Whereeee areee youuu?". • Tremolos or Laugh: Sound of disturbance; the higher the pitch the more disturbed. • Yodels: Male only; territorial and aggressive; # of repetitions is important (distinct to individuals). • Hoots: Family calls. • Combinations of Tremolos with wail or yodel: Tremolo always precedes: tremolo/wail = afraid, such as with human disturbance; tremolo/yodel = fight, but also flight, perhaps a male against a pair.
3	Arctic loon on nest	**Arctic Loon** *Gavia arctica arctica* (European Arctic Loon) Gavia arctica viridigularis (Siberian/Alaskan Species) Breeds in arctic and subarctic areas. Slightly smaller than the Common Loon. Larger and grayer than the Pacific Loon.
4	Pacific loon on nest	**Pacific Loon** *Gavia pacifica*. Breeds in Alaska/Northwest Territories and Siberia. Designated as a distinct species from the Arctic Loon on basis of geographical occurrences and differences in appearance. Silver gray head and smaller than the Arctic Loon.
5	Red-throated loon	**Red-throated Loon** *Gavia stellata.* Breeds along the Alaskan, Northwest Territories and Hudson Bay coastlines. These are considered to be the least specialized of the loons because their adaptations for diving are less well developed than for the other four species. RTLO are more grebe-like. Their plumage lacks the iridescent head feathers, stripes on the neck and back of head and large spots on the body feathers. They have the largest wing surface area relative to body size and can make the most efficient take off for flight. They have been observed taking off directly from land.
6	Yellow-billed loon	**Yellow-billed Loon** *Gavia adamsii.* Breeds in tundra and adjacent arctic coasts. Largest of the loon species. Calls are similar to common loons.

Slide	Image(s)	Notes
7	Common loon on water, wings extended	**Adaptations** The wing surface area is only half that of a goose of the same size. This reduction of wing area is necessary to reduce drag while the bird is diving.
8	Loon running on take-off	It also means that the birds must have a runway for take off. Sometimes that runway needs to ¼ mile long. They cannot take off from land. When landing in water, they set their wings and glide in, landing on their bellies.
9	Loon in flight	The loon is very distinctive in flight, with its long legs trailing out from the tail, humped back (like the Concord Jet) and rapid wing beat. After take off, they fly low at first and slowly start to gain elevation. They circle around the lake, often doing the flight tremolo and finally clear the trees. Once underway, their cruising speed is 75 MPH and if they are in a big hurry, they have been clocked at 100 MPH.
10	Close-up of loon, side image, with fish in bill	Adaptations seen here include: Black and white camouflage allowing the bird to virtually disappear in sparkling water. It also allows the bird to disappear when dive so prey can't see them. The red eye allows the bird to see better in low light hunting situations such as hunting under water. The "fish-spear" beak of course allows the loon to catch its fish prey. The fish are not speared, but are caught and swallowed head first. The edges of the bill are very sharp, but not serrated like a common merganser. Loons can adjust their position in a vertical column of water much like a submarine. They use their wings to press air out of their plumage and body cavity. This causes them to sink in place like a stone. When they loosen their wings, they rise vertically in place. Loons have bones that are more solid than most other birds. This allows them to dive to greater depths with little effort. Loons are "flying submarines." Their legs come out of their bodies at the tail and serve as the "motor" for the submarine. Most of the leg of the loon is encased in its body giving the bird a very strong swimming stroke, but seriously limiting its ability to walk on land. Loons out swim their fish prey as underwater they become torpedo-shaped. The smoothness of the head, body shape, laterally compressed legs all aid in reducing resistance of movement in water.
11	Pair on a misty lake	**Life History and Distribution** A pair of loons will return to the same lake for many years. They usually arrive in early to mid April.
12	Close-up of adult on nest	Courtship between loons is rather subdued since the partners probably know one another. They just quietly swim, dive, preen, and rest together. Then they examine the shorelines of islands or marshy sites looking for a suitable location for a nest.
13	On nest with reflection of loon in water	Loon nests are immediately adjacent to water in marshy backwaters or near inlets. They are large structures often up to 3 feet across and mostly composed of rootlets and mud from underwater.
14	Loon turning egg	Both sexes help incubate 2 eggs for about 26-28 days. The eggs are laid 1 day apart, so the first egg will hatch 12-24 hours before the second egg. Eggs are turned each time an adult returns to the nest.
15	Adult feeding chick	Newly hatched chicks are covered with black downy feathers that remain for about 7-10 days. They are replaced by brownish-gray down feathers between 10-14 days old.

Slide	Image(s)	Notes
16	Adult, two small chicks on board	Adults carry the chicks on their backs for the first few weeks after hatching. In this way, the chicks are protected from aquatic predators and can get warm and dry after being exposed to cold water.
17	Pair with two small chicks in water	A nursery area is a shallow backwater area where the loon family stays for the first four weeks after chicks are hatched. The site is protected from winds and wind-generated waves that can separate the chicks from their parents. It is also perfect for bass and pike habitat, so anglers need to be extra alert for loon families in these areas in June and July.
18	Chick next to adult	At about 4 weeks old, the brownish-gray downy feathers are replaced by smoother contour feathers of the same color.
19	Adult and older chick, side by side	By the time the young are 10-11 weeks old, their juvenile plumage is complete, and flight feathers have erupted enough to allow flight practice. They fly 11-13 weeks after their hatch date. This set of feathers will be retained by the juvenile until the next summer when it will experience its first complete molt. This molt replaces all the juvenile feathers with another set of "basic" plumage. The color? You guessed it…..gray!
20	Four adults close together, one stretching wings	Loon chicks start to fly when they are 11-13 weeks old which means they are flightless until at least middle August. By September, the adults are starting to gather on staging areas in preparation for the fall migration to the Pacific Coast. This year"s chicks will stay on the coast for 3 years while the adults will return to their territories again next April.
21	"Penguin dance"	**Disturbance** Loons are extremely territorial towards other loons, water birds, and people on their lakes or near their nests. They communicate extreme stress, disturbance, and territoriality by doing the "Penguin Dance." If you see this behavior, leave the area immediately, since the message of this behavior is "you are too close."
22	Male yodeling	When the male yodels, he lowers his head across the water and usually faces whatever is causing the territorial problem.
23	Adult in upright wing-flap posture, small chick nearby	How do you know if you are disturbing a loon pair or family? A series of behaviors will help you determine this. If a nonresident loon or a boat enters the territory, the first response from the resident pair is to rise up out of the water, face the intruder, and flash the white chest and underwings. The message seems to be "this territory is taken. I really don"t want to have to deal with you, but I will if you persist." Then the birds approach the intruder to communicate their territoriality more clearly. [People have said "the loons like me--they come right up to my boat." While loons are curious, their usual reason for approaching during the nesting and chick-rearing seasons is territorial defense].
24	Attentive pose	Then the bird(s) will nervously bob their heads. They look under the water for an intruding loon attacking from that angle, then raise their heads on an elongated neck and search for a loon popping out of the water. They communicate the same way when a boat has come too close. [Watch for a raised neck and listen for vocalizations. If any of these things occur, move away from the birds and give them a little more room. During the nesting season (May1-June 30) if you see one bird in the water, the other one is probably on a nest that could be nearby. If you see two birds in the water, you may have caused the nesting bird to leave the nest. Look around. Are you near a marshy shoreline or island or in a backwater? If so, move away from the shore line so the bird can return to the nest.]

Slide	Image(s)	Notes
25	Anglers in boat and loon family	Loons and people can coexist on the same lake as long as people give the birds extra space. Watch for floating signs that indicate closed areas around nest sites and try to stay at least 100 yards from a family group. If we do this, our children and grandchildren will have a chance of the haunting calls of loons on their favorite lake.